Report Date: 28 Jul 2015

Summary Report for Individual Task
052-USR-4101
Develop an Incident Action Plan for an Urban Search and Rescue Incident

Status: Approved

Distribution Restriction: Approved for public release; distribution is unlimited.

Destruction Notice: None

Foreign Disclosure: FD1 - This training product has been reviewed by the training developers in coordination with the FLW foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

Condition: You are a leader of an Urban Search and Rescue (US&R) team and given a US&R team, size-up information, and an US &R incident scene. This task should not be trained in MOPP 4.

Standard: Develop an incident action plan for an US&R incident ensuring that all measures are met and applicable forms are submitted to the Incident Commander in accordance with (IAW) National Fire Protection Association (NFPA) 1006 and unit SOP.

Special Condition: None

Safety Risk: Low

MOPP 4: Never

Task Statements

Cue: None

DANGER

None

WARNING

None

CAUTION

None

Remarks: All required references and technical manuals will be provided by the local US&R Command.

Notes: None

Performance Steps

1. Establish an Incident Management System (IMS).

Note: Incident Management System is a system that defines the roles, responsibilities and standard operating procedures used to manage emergency operations. Such systems may also be referred to as Incident Command Systems (ICS).

a. Identify who is in command.

b. Establish the staff and their responsibilities.

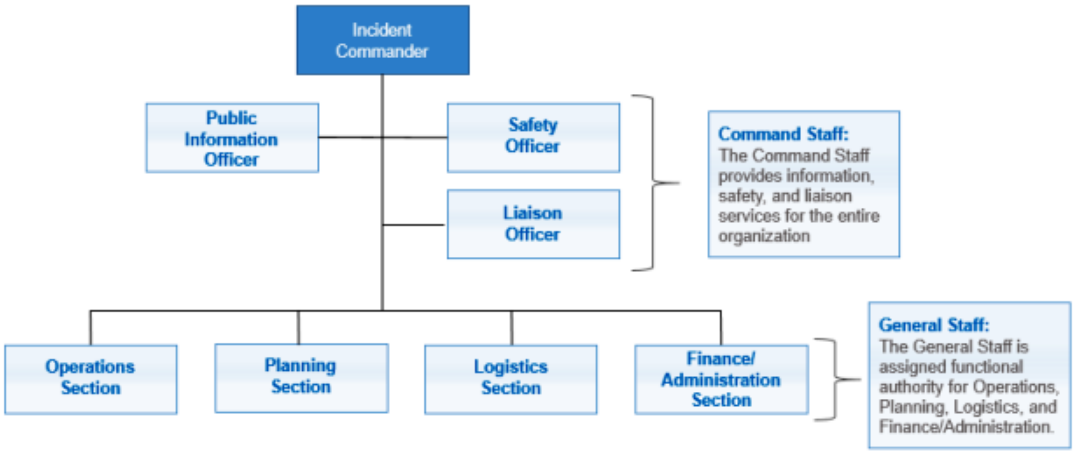

FIgure 052-USR-4101-1
IMS Organizational Chart

(1) Incident Commander - overall responsibility for the management of all incident operations.

(2) Public Information Officer - interacts with the media and provides a single point of contact for information related to an incident.

(3) Safety Officer - responsible for enforcing general safety rules and developing measures for ensuring personnel safety.

(4) Liaison Officer - coordinates information and resources among cooperating and assisting agencies and establishes contacts with agencies that may be capable or available to provide support.

(5) Operations Section - responsible for development, direction and coordination of all tactical operations conducted in accordance with an incident action plan.

(6) Planning Section - responsible for the collection, evaluation, dissemination and use of information and intelligence critical to the incident.

(7) Logistics Section - responsible for all support requirements needed to facilitate effective and efficient incident management, including providing supplies, services, facilities and materials during the incident.

(8) Finance & Administration Section - responsible for the accounting and financial aspects of an incident as well as any legal issues that may arise.

c. Establish a command post.

Note: The command post is located in the cold zone.

2. Review size up information. (See task 052-247-3101)

3. Establish incident objectives.

Note: Clear, concise objectives should be considered for managing the response. Ideally these objectives will be listed in priority order. Objectives are for the incident response as well as for the duration of the incident. ICS Form 202 can be used to assist with establishing objectives.

4. Conduct a risk/benefit analysis.

Note: An acceptable level of risk can only be justified when the potential to save lives is great. When no lives or property can be saved there is no justification to expose rescue personnel to avoidable risks.

5. Establish safe operating zones. (See tasks 052-247-3101 & 052-247-3201)

Note: Hot zone - a restricted zone where rescue is taking place; only personnel who are dealing directly with the treatment or freeing victims are allowed.

Warm Zone - located immediately outside the hot zone and is for personnel directly supporting the rescuers in the hot zone.

Cold Zone - this area surrounds the warm zone and is used for staging vehicles, equipment and contains the command post.

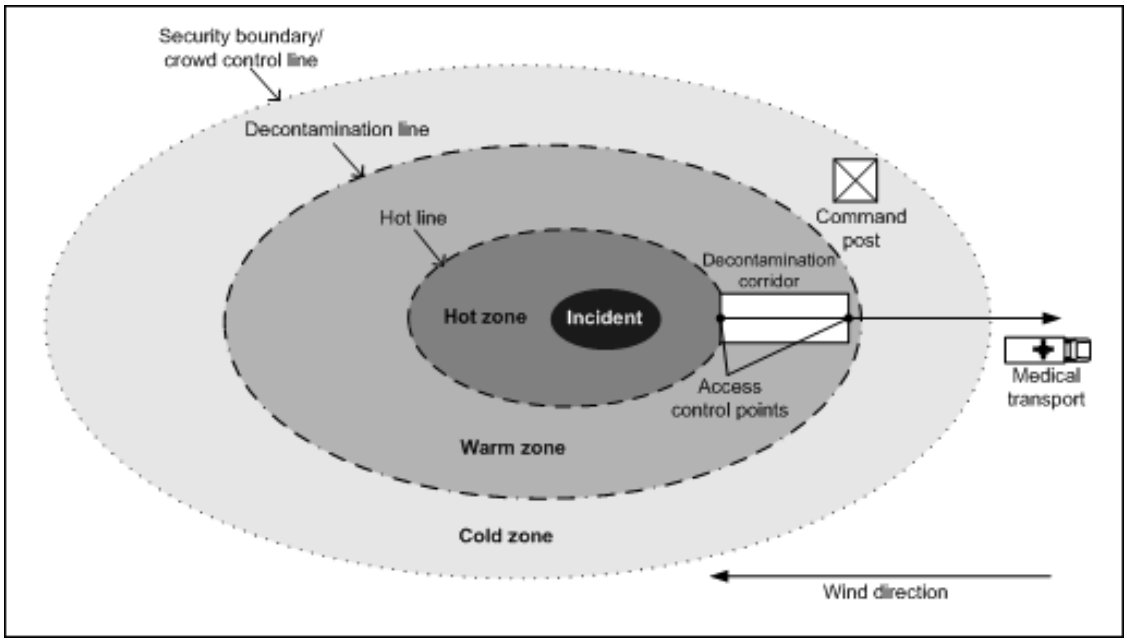

Figure 052-USR-4101-2
Safe Operating Zones

6. Establish operational work areas.

a. Medical treatment area - location where the medical team can set up operations and provide treatment to victims (cold zone).

b. Rehab area - area where unassigned incident members can rest, eat, and rehydrate (cold zone).

c. Staging - location where personnel immediately available for reassignment are located (cold zone).

d. Equipment staging area - place where assigned tools and equipment can be safely stored, maintained and issued as needed to support the operation (cold zone).

e. Cribbing/shoring working area - area where building materials/lumber can be stored and processed as needed to support the on-site search and rescue operation (warm zone).

f. Access/entry route(s) - clearly defined avenue(s) that have been planned and identified for access to and from the rescue work site. Personnel, tools, equipment, and other logistics needs are safely channeled through this route.

7. Control scene access/security at the incident.

Note: Law enforcement resources should be requested to control crowds and traffic and to begin establishing a controlled incident perimeter.

a. Place guards at entrance points to prevent non-rescue personnel from entering.

b. Place barriers or tape off access points.

c. Position rescue vehicles at roads leading to and from the incident.

8. Establish work parameters.

a. Establish areas of responsibility based on the size and capability of the unit.

b. Establish personnel rotations (work-rest cycles).

c. Establish a personnel accountability system in accordance with the unit's SOP.

Note: Accountability system tracks personnel on the scene along with their assignment and location.

9. Identify general incident support.

a. Food/beverages - for all incident personnel.

b. Sanitary facilities - portable toilets and garbage containment.

c. Communications support - additional radios, cell phones, batteries, etc.

d. Supply - includes nonexpendable tools and equipment (such as generators and power tools) and expendable supplies (such as gloves, saws, hard hats, eye protection).

e. Ground support - includes fuel, mechanics and transportation.

f. Facilities - may include a building, trailer for command post; rest/sleeping area for responders; lighting and heat for staging and rest areas.

g. Medical support - for responders.

10. Determine construction type.

a. Light frame buildings - refers to residential homes and apartments of up to four stories that are principally constructed of wood. The main weakness of light frame buildings is the lack of lateral strength of the walls and the connections.

b. Unreinforced masonry (URM) buildings - these buildings are from one to six stories in height and may be residential, commercial, industrial or institutional. They have heavy masonry walls and wooden floors. Their principal weakness is in the lateral strength of the walls and the connections between the walls and floor or roof assemblies.

c. Concrete frame building - these buildings can be residential, commercial or industrial. They have concrete frames and may be up to 13 stories tall. This category includes concrete highways bridges. The principle weakness of these structures is the poor column reinforcement and inadequate connections between floor slabs and columns.

d. Precast concrete building - these buildings may be one or more stories in height and consist of individual building components such as walls, floors, columns and beams that are premade at a factory and assembled on site. Parking garages are common precast structures. The primary weakness occurs at the interconnection of the various components, such as where the beam connects to the column or floor slabs connect to the walls.

11. Identify collapse type.

a. Lean-To Collapse - is formed when one or more of the supporting walls or floor joists breaks or separates at one end, causing one end of the floor to rest on the lower floor or collapsed debris.

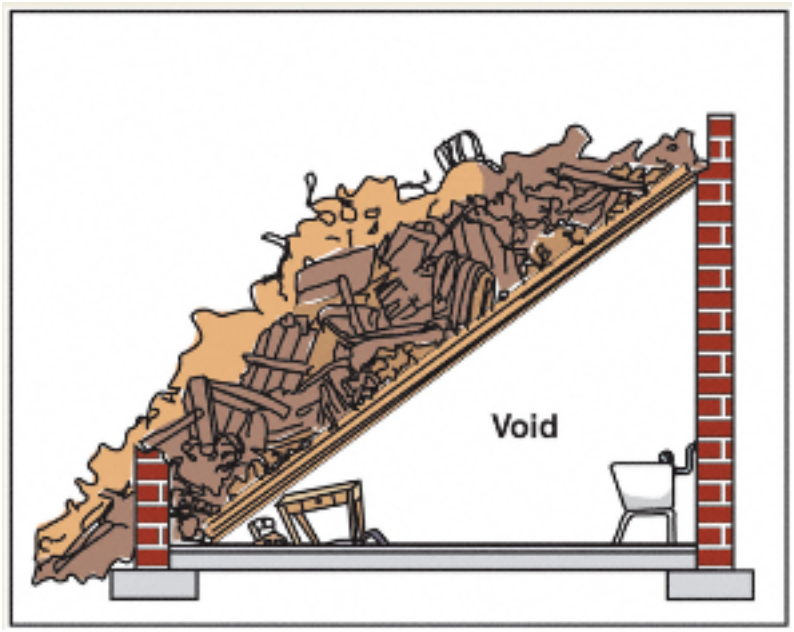

Figure 052-USR-4101-3
Lean-To Collapse

b. V-Shape Collapse - is formed when heavy loads cause the floor to collapse near the center and this portion of the floor drops to the lower floor while both outside connections to the walls are maintained.

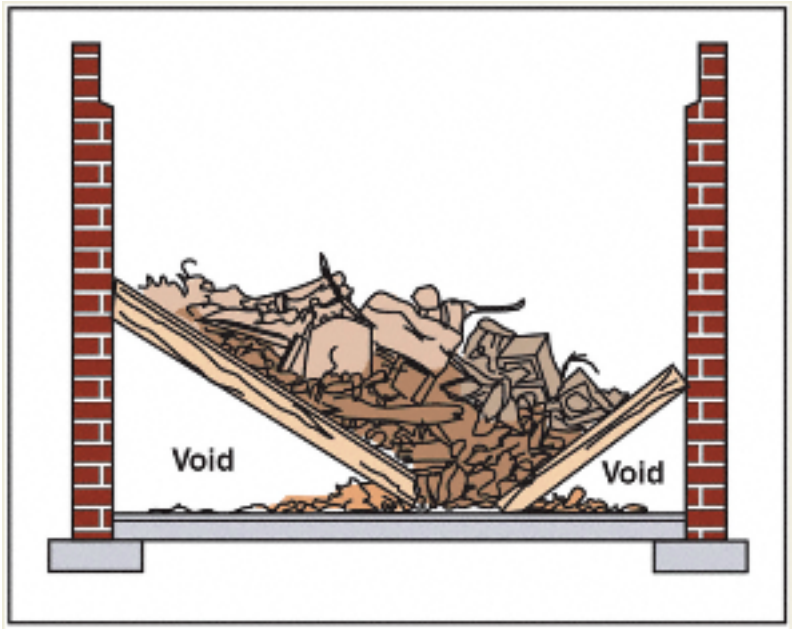

Figure 052-USR-4101-4
V-Shape Collapse

c. Pancake Collapse - is formed when the bearing wall or column fails completely and an upper floor drops onto a lower floor.

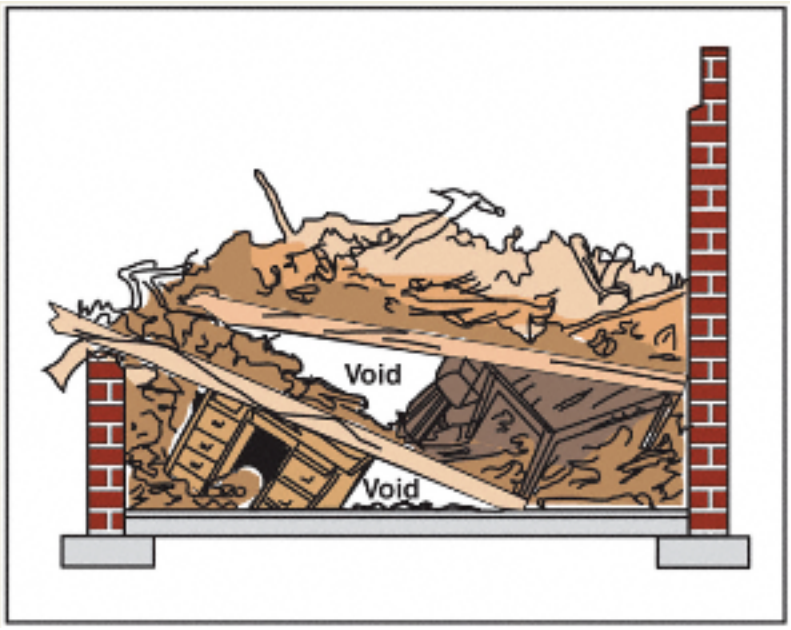

Figure 052-USR-4101-5
Pancake Collapse

d. Cantilever Collapse - is formed when one end of the floor hangs free because one or more walls have failed and the other end of the floor is still attached to the wall.

Figure 052-USR-4101-6
Cantilever Collapse

e. A-Frame Collapse - is formed when the flooring separates from the exterior bearing walls but still is supported by one or more interior bearing or nonbearing partitions.

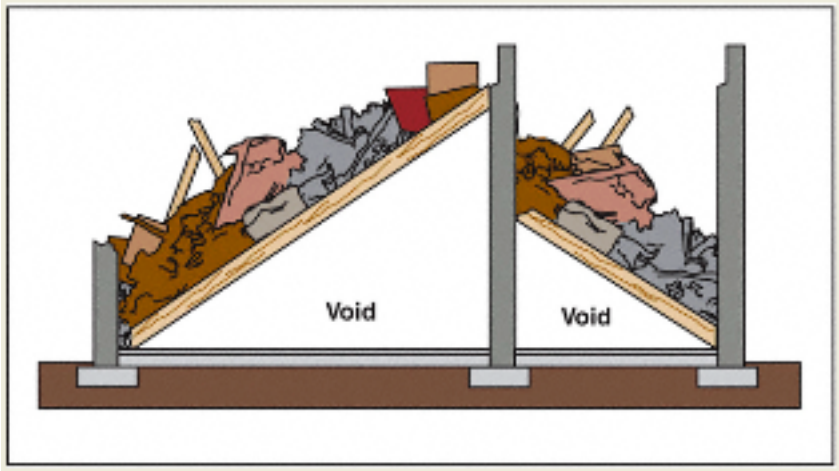

Figure 052-USR-4101-7
A-Frame Collapse

12. Determine occupancy.

Note: Occupancy has many critical factors to be considered like time of day, the day of week, time of the year, etc. For example, if an earthquake occurs at 2100 hours and collapses an office building and an apartment building, the apartment building would normally represent the higher potential for a successful rescue than would the office building. If the event occurred at 1000 hours, the opposite would be true.

a. Occupancy based on unit:

(1) Schools - 20-25 students per class room.

(2) Hospitals - 1.5 occupants per bed.

(3) Residential - 2.0 occupants per bedroom.

(4) Office Building - 1.5 occupants per parking space.

b. Occupancy based on area:

(1) Schools - 1 per 70 sq. ft.

(2) Hospitals - 1 per 100 sq. ft.

(3) Residential - 1 per 200 sq. ft.

(4) Office Building - 1 per 150 sq. ft.

(5) Industrial - 1 per 200 sq. ft.

(6) Warehouse - 1 per 600 sq. ft.

13. Identify associated hazards.

a. Environmental hazards:

(1) Damaged utilities - create life-threatening conditions for rescuers and trapped victims alike.

(a) Live electrical wires are the most common and most obvious secondary hazard. However, their full danger is not so obvious. Wires buried in rubble or debris can energize electrical conduits, plumbing and metal structural components with which they come in contact.

(b) Broken water pipes can increase the likelihood of electrical shock by wetting the areas where rescuers work. Broken water pipes can also threaten victims trapped in low areas with drowning. They can increase the likelihood of secondary collapse by adding the weight of the water to the building.

(c) Broken gas pipes can add the possibility of fire or explosion.

(d) Disrupted steam lines can cause burns to rescuers and trapped victims.

(e) Sewage from broken sewer lines can release toxic gases such as hydrogen sulfide or methane and can expose rescuers and trapped victims to bacteria.

(2) Atmospheric contamination - present at all structural collapse sites.

(a) Concrete dust is a particular concern because it is high in alkaline.

(b) Asbestos is a concern because it is a long-term carcinogen. Unless it is dampened down by rainfall or by hose streams, dust stirred up can remain suspended in the air for hours, especially in voids and other confined spaces.

(c) Broken gas pipes can add a flammable and potentially explosive contaminant to the atmosphere.

(d) Pure oxygen or other medical gasses or a variety of harmful industrial gases may also contaminate the atmosphere in and around the site.

(e) Airborne biological hazards may be present in a collapsed medical facilities or in any structure where victims' remains cannot be removed within the first day or two.

(3) Hazardous materials - many common industrial and commercial chemicals are quite safe when stored and used under normal conditions, but when chemicals leak from damaged containers it can make an already bad situation worse.

(a) Hardware stores contain paint and paint thinners, caustics, pesticides, herbicides, rodent poisons, pool supplies and aerosol cans.

(b) Grocery stores contain cleaners, caustics, ammonia, bleach, and charcoal lighter fluid.

(c) Sport supply stores contain flammable liquids, flammable gases and gunpowder.

(d) Hospitals contain gases, flammable liquids, poisons, radioactive and biological hazards.

(e) Schools contain gases, flammable liquids, cleaning supplies, and chemistry lab chemicals.

(4) Darkness - any emergency is more hazardous at night. Downed electrical wires, unstable debris and other hazards that might be noticed in full light may go unseen in darkness.

(5) Temperature - extremes of temperature can create hazardous conditions for rescuers and victims alike.

(a) In very hot weather, rescuers performing heavy manual labor are vulnerable to heat exhaustion or even heatstroke, and rescuers and victims can suffer from dehydration.

(b) Extreme cold can hamper rescue efforts and subject rescuers and victims to hypothermia, frostbite, slipping hazards and other cold-related conditions. Wet conditions can become extremely slippery when the moisture freezes.

(6) Noise - high noise levels adds to the stress of everyone involved in the operation and significantly reduces the ability of rescuers to communicate clearly with each other. High noise also reduces the chance of hearing a faint call from a victim, the hiss of escaping gas or the creaking sound of shifting debris.

(7) Fire hazards - an incident may contain concealed fires that erupt as rescuers gain access to portions of the structure.

b. Physical hazards:

(1) Surface hazards - the environment that rescuers must operate in is filled with sharp debris. The debris will differ, but generally rescuers must deal with broken glass, exposed nails, wood splinters, jagged metal and rough masonry.

(2) Unstable debris - the same mechanism that causes or triggers a secondary collapse can cause pieces of rubble or other debris to suddenly shift and fall. When rescuers move one piece of debris, it can dislodge other unstable pieces and cause them to fall.

(3) Overhead hazards - these include loose debris and building components suspended overhead, sections of concrete hanging from attached reinforcing bars, and dislodged bricks precariously perched on a broken wall assembly. Other hazards may also pose an electrocution danger due to damaged electrical wires that are hanging low. Rescue operations in progress can create overhead hazards from sudden failure of rigging chains or slings that are damaged or overloaded causing massive building components to be dropped.

(4) Confined spaces - rescuers may have to enter and work in void spaces left by collapse of the structure. The spaces may be dark, wet, contaminated and surrounded by unstable debris.

(5) Below grade spaces - may sustain less damage than the rest of a collapsed building because they are designed to support the weight of the building. Because the space is below grade leaking fluids and heavier-than-air gases can flow and collect in them. As time passes, these spaces can become more hazardous for both the victim and rescuer due to accumulated contaminants.

(6) Heights - victims may be stranded on upper floors without stairs or other means of escape. Working in these conditions can be hazardous because they are vulnerable to secondary collapse and rescuers must spend more time in order to safely remove the victims.

(7) Vibrations - from various sources (trains, subways, vehicular traffic, helicopters over the collapse site, heavy construction equipment) are a safety concern to rescuers because they can cause a secondary collapse.

14. Identify potential specialized resources.

a. Structures specialist- is a licensed professional engineer trained in structure stability and should be involved in ongoing rescue extrication operations, especially those involving significant cutting, breaching, moving, and lifting operations.

b. Heavy equipment and rigging specialist - provides recommendations regarding the integration of cranes, large scale lifting operations, heavy equipment, etc., into the rescue operation.

c. Hazardous material specialist - provides personnel trained to perform hazardous material assessment and spill containment.

d. Medical specialist - provides medical assessment, intervention and stabilization that are essential to the eventual survival of the entrapped victim(s), both during the course of the extrication and after release.

15. Determine PPE requirements for the incident.

16. Establish rapid intervention teams/crews (RIT/C). (See task 052-247-3201)

17. Evaluate and revise the plan, if required.

18. Terminate the incident.

a. Ensure all personnel are accounted for.

b. Perform equipment accountability.

c. Release control of the scene.

Note: The owner or responsible party should be escorted on a tour of the scene or as close to it as safely possible and should be given an explanation of any remaining hazards. If the scene is still too hazardous, the owner may be required to post a security guard or erect a security fence around the site. Before the scene is released, it might require the owner to sign a written release that describes the hazards and stipulates the conditions the owner must meet.

d. Conduct incident debriefing.

Note: Reviewing an incident with everyone involved will allow all parties to learn from the call and make the next call even more successful. If a death or serious injury occurred during the call a critical incident stress debriefing (CISD) session may occur to assist rescuers.

e. Submit Incident Command System (ICS) forms or similar agency worksheets to the Incident Commander.

(Asterisks indicates a leader performance step.)

Evaluation Guidance: Score the Soldier a GO if all measures are passed (P). Score the Soldier a NO-GO if any measure is failed (F). If the Soldier fails any measure, show him how to do it correctly.

Evaluation Preparation: Setup: Provide the Soldier with all the items listed in the conditions. Brief Soldier: Tell the Soldier to Develop an Incident Action Plan for an Urban Search and Rescue Incident.

PERFORMANCE MEASURES	GO	NO-GO	N/A
1. Established an Incident Management System (IMS).			
2. Reviewed size up information. (See task 052-247-3101)			
3. Established incident objectives.			
4. Conducted a risk/benefit analysis.			
5. Established safe operating zones. (See tasks 052-247-3101 & 052-247-3201)			
6. Established operational work areas.			
7. Controlled scene access/security at the incident.			
8. Established work parameters.			
9. Identified general incident support.			
10. Determined construction type.			
11. Identified collapse type.			
12. Determined occupancy.			
13. Identified associated hazards.			
14. Identified potential specialized resources.			
15. Determined PPE requirements for the incident.			
16. Established rapid intervention teams/crews (RIT/C). (See task 052-247-3201)			
17. Evaluated and revised the plan, if required.			
18. Terminated the incident.			

Supporting Reference(s):

Step Number	Reference ID	Reference Name	Required	Primary
	Corps of Engineers	US Army Corps of Engineers, Urban Search and Rescue, Shoring Operations Guide, 3rd Edition	Yes	No
	IFSTA	International Fire Service Training Association (IFSTA) Fire Service Search and Rescue, 7th Edition	Yes	No
	IFSTA - 1st Edition	IFSTA Technical Rescue for Structural Collapse, 1st Edition	Yes	No
	NFPA 1006	Standard for Rescue Technician Professional Qualifications	Yes	Yes

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects. Refer to FM 3-34.5 Environmental Considerations and GTA 05-08-002 ENVIRONMENTAL-RELATED RISK ASSESSMENT.

Safety: In a training environment, leaders must perform a risk assessment in accordance with ATP 5-19, Risk Management. Leaders will complete the current Deliberate Risk Assessment Worksheet in accordance with the TRADOC Safety Officer during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical (NBC) Protection, FM 3-11.5, Multiservice Tactics, Techniques, and Procedures for Chemical, Biological, Radiological, and Nuclear Decontamination.

Prerequisite Individual Tasks :

Task Number	Title	Proponent	Status
052-247-3101	Perform a Size Up of an Urban Search and Rescue Incident	052 - Engineer (Individual)	Approved

Supporting Individual Tasks :

Task Number	Title	Proponent	Status
052-247-1312	Conduct a Rescue of a Victim from a High-Angle Man-Made Structure	052 - Engineer (Individual)	Approved
052-247-3201	Supervise Rescue Operations at an Urban Search and Rescue Incident	052 - Engineer (Individual)	Approved
052-247-3101	Perform a Size Up of an Urban Search and Rescue Incident	052 - Engineer (Individual)	Approved

Supported Individual Tasks :

Task Number	Title	Proponent	Status
052-247-1232	Establish Access and Egress Openings for a Heavy Vehicle Incident	052 - Engineer (Individual)	Approved
052-247-1327	Establish Access and Egress Openings for Light Vehicles and Small Machinery	052 - Engineer (Individual)	Approved
052-247-3201	Supervise Rescue Operations at an Urban Search and Rescue Incident	052 - Engineer (Individual)	Approved

Supported Collective Tasks : None